**PATENT APPLICATION**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Takaaki TANAKA, Yasushi YAMAZAKI

Application No.: New U.S. Patent Application

Filed: February 19, 2002 Docket No.: 111988

For: LIQUID CRYSTAL DEVICE, PROJECTION DISPLAY DEVICE AND, MANUFACTURING METHOD FOR SUBSTRATE FOR LIQUID CRYSTAL DEVICE

PRELIMINARY AMENDMENT

Director of the U.S. Patent and Trademark Office
Washington, D. C. 20231

Sir:

Prior to initial examination, please amend the above-identified application as follows:

IN THE CLAIMS:

Please replace claims 5-6,9-12 and 19 as follows:

5. (Amended) A liquid crystal device according to claim 1, wherein the alignment layers are oblique evaporation layers made of silicon oxide.

6. (Amended) A projection display device, provided with a liquid crystal device according to claim 1, comprising:

a light source for emitting light;

the liquid crystal device which modulates the light emitted from the light source; and

a magnifying projection optical system which magnifies the light modulated by the liquid crystal device and projects the light on a projection plane.

9. (Amended) A liquid crystal device according to claim 7, wherein azimuth angles of slanting directions of columnar structures of an inorganic material constituting both the first and the second oblique evaporation layers (36a, 36b) differ by nearly 90 degrees.

10. (Amended) A liquid crystal device according to claim 7, wherein the thickness of the first inorganic oblique evaporation layer (36a) is in the range of 5 nm to 16 nm, and the thickness of the second organic oblique evaporation layer (36b) is in the range of 10 nm to 40 nm.

11. (Amended) A liquid crystal device according to claim 7, wherein pre-tilt angle $\theta_p$ of liquid crystal molecules of the liquid crystal layer is in the range of 5 to 15 degrees.

12. (Amended) A liquid crystal device according to claim 7, wherein the inorganic alignment layers (36, 42) are oblique evaporation layers made of silicon oxide.

19. (Amended) A projection display device, provided with a liquid crystal device according to claim 7, comprising:

a light source for emitting light;

the liquid crystal device which modulates the light emitted from the light source; and

a magnifying projection optical system which magnifies the light modulated by the liquid crystal device and projects the light on a projection plane.

REMARKS

Claims 1-19 are pending. By this Preliminary Amendment, claims 5-6, 9-12 and 19 are amended to eliminate multiple dependencies. Prompt and favorable examination on the merits is respectfully requested.

The attached Appendix includes marked-up copies of each rewritten claim (37 C.F.R. §1.121(c)(1)(ii)).

Respectfully submitted,

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Attachment: Appendix

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APPENDIX

Changes to Claims:

The following are marked-up versions of the amended claims:

5. (Amended) A liquid crystal device according to claim 1 ~~or 3~~, wherein the alignment layers are oblique evaporation layers made of silicon oxide.

6. (Amended) A projection display device, provided with a liquid crystal device according to claim 1 ~~or 3~~, comprising:

a light source for emitting light;

the liquid crystal device which modulates the light emitted from the light source; and

a magnifying projection optical system which magnifies the light modulated by the liquid crystal device and projects the light on a projection plane.

9. (Amended) A liquid crystal device according to claim 7 ~~or 8~~, wherein azimuth angles of slanting directions of columnar structures of an inorganic material constituting both the first and the second oblique evaporation layers (36a, 36b) differ by nearly 90 degrees.

10. (Amended) A liquid crystal device according to claim 7 ~~or 8~~, wherein the thickness of the first inorganic oblique evaporation layer (36a) is in the range of 5 nm to 16 nm, and the thickness of the second organic oblique evaporation layer (36b) is in the range of 10 nm to 40 nm.

11. (Amended) A liquid crystal device according to claim 7 ~~or 8~~, wherein pre-tilt angle $\theta_p$ of liquid crystal molecules of the liquid crystal layer is in the range of 5 to 15 degrees.

12. (Amended) A liquid crystal device according to claim 7 ~~or 8~~, wherein the inorganic alignment layers (36, 42) are oblique evaporation layers made of silicon oxide.

19. (Amended) A projection display device, provided with a liquid crystal device according to claim 7 ~~or 8~~, comprising:

a light source for emitting light;

the liquid crystal device which modulates the light emitted from the light source; and

a magnifying projection optical system which magnifies the light modulated by the liquid crystal device and projects the light on a projection plane.